Mouth

Food is physically digested via chewing

Starch is chemically digested by salivary amylase to maltose

Oesophagus

Starch is chemically digested by salivary amylase to maltose

Stomach

Bolus undergoes churning to mix well with gastric juices

Protein is chemically digested by pepsin to polypeptide

Concentrated hydrochloric acid destroys pathogen

Duodenum

Lipid in acidic chyme undergoes emulsification by bile from liver

Lipid droplet is chemically digested by pancreatic lipase to fatty acid and glycerol

Starch is chemically digested by pancreatic amylase to maltose

Ileum

Lipid droplet is chemically digested by intestinal lipase to fatty acid and glycerol

Maltose is chemically digested by maltase to glucose

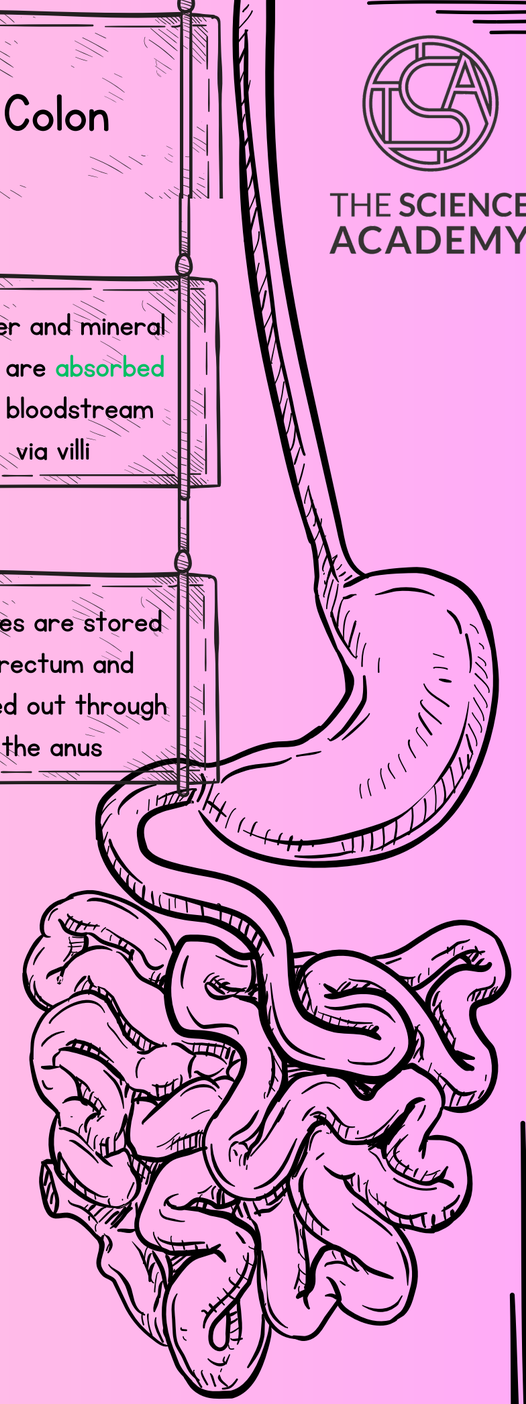
Protein is chemically digested by trypsin and erepsin to amino acids

Glucose and amino acids are absorbed into bloodstream via villi

Colon

Water and mineral salts are absorbed into bloodstream via villi

Faeces are stored in rectum and passed out through the anus



THE SCIENCE ACADEMY

Learning Points

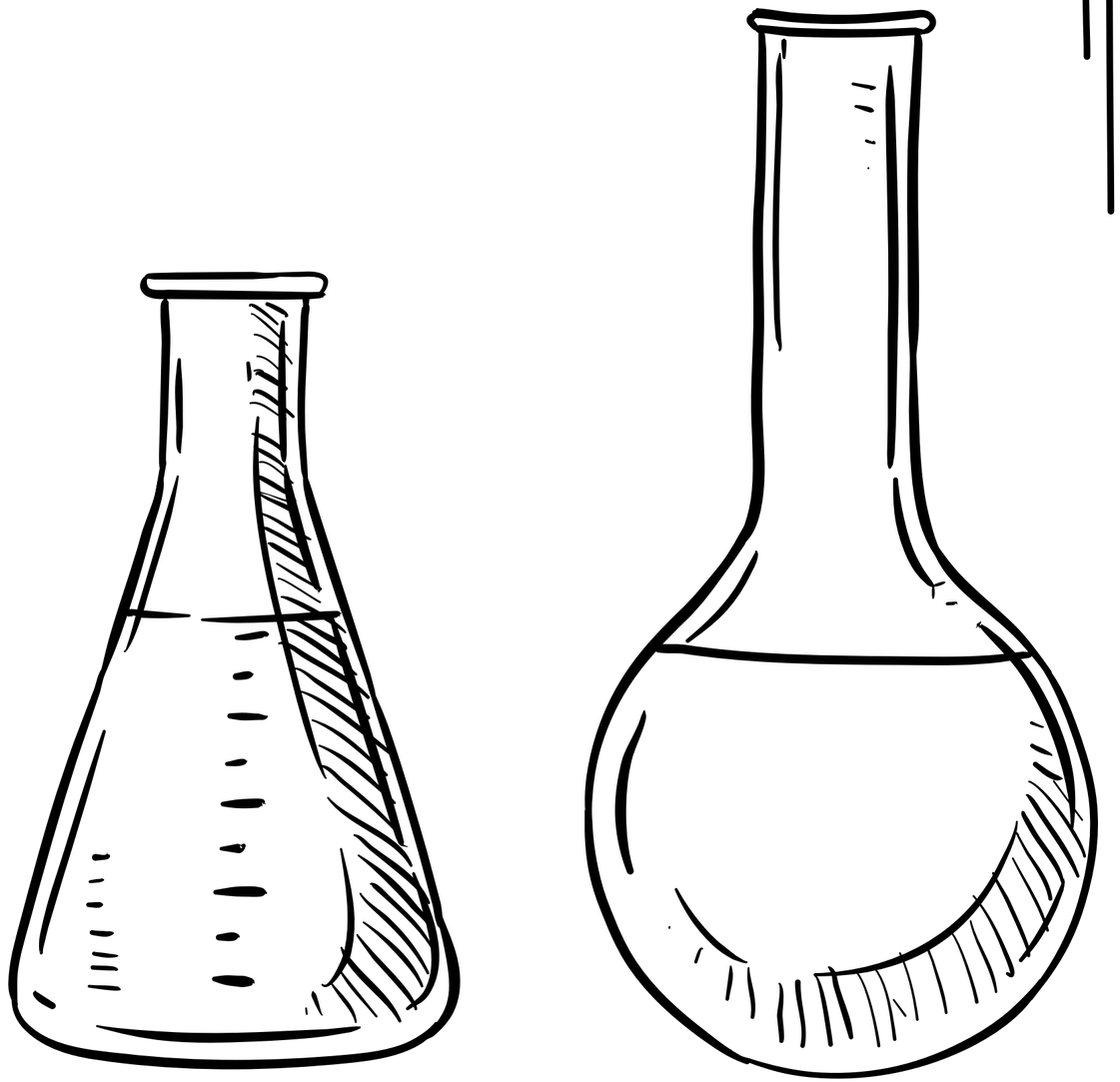
Describe what an enzyme is and its role in the body.

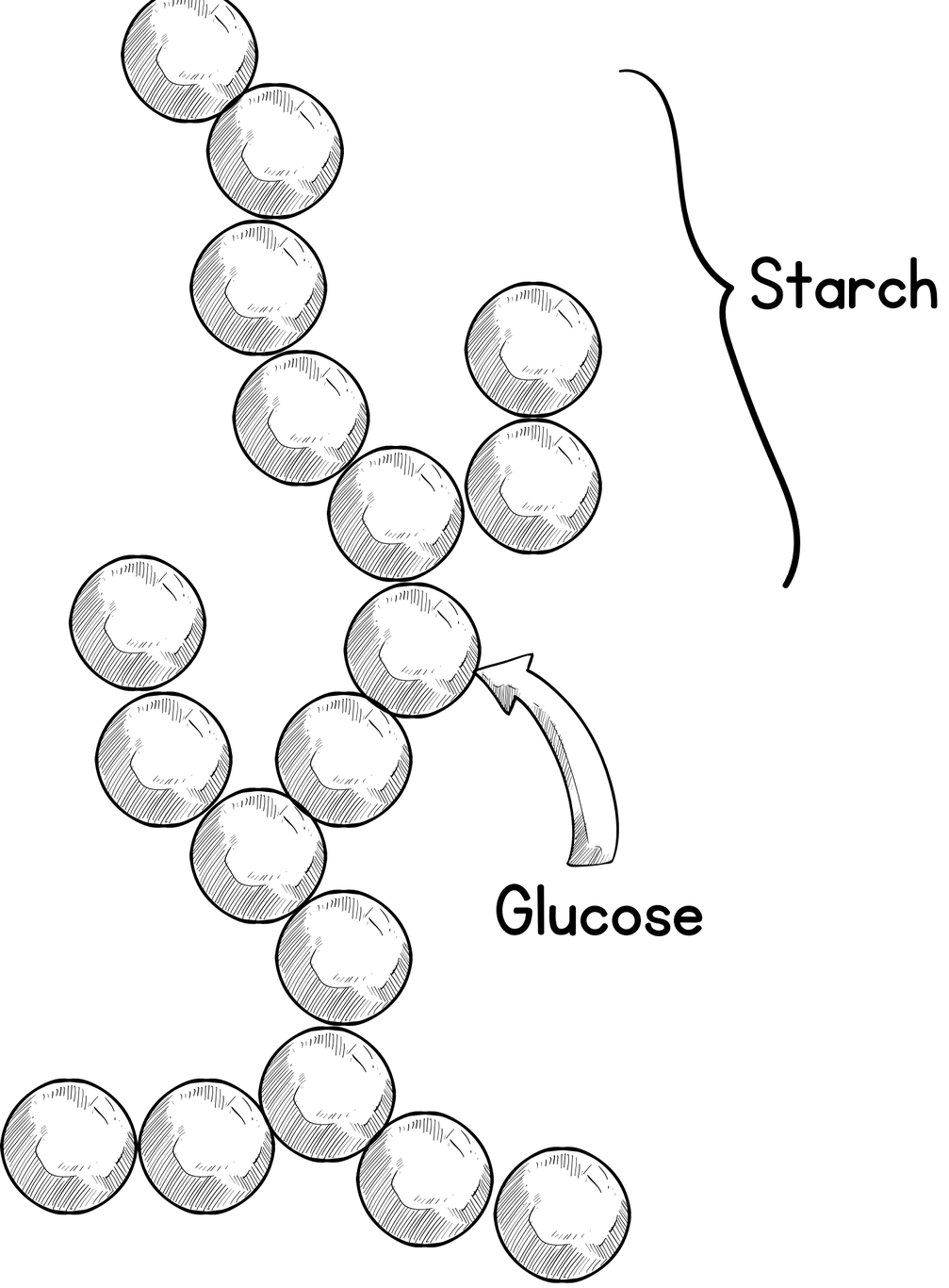
Name key digestive enzymes in the human body.

Give an example for each digestive enzyme and state its location.

What are enzymes?

Enzymes are proteins which catalyse or speed up a chemical reaction.





Carbohydrases

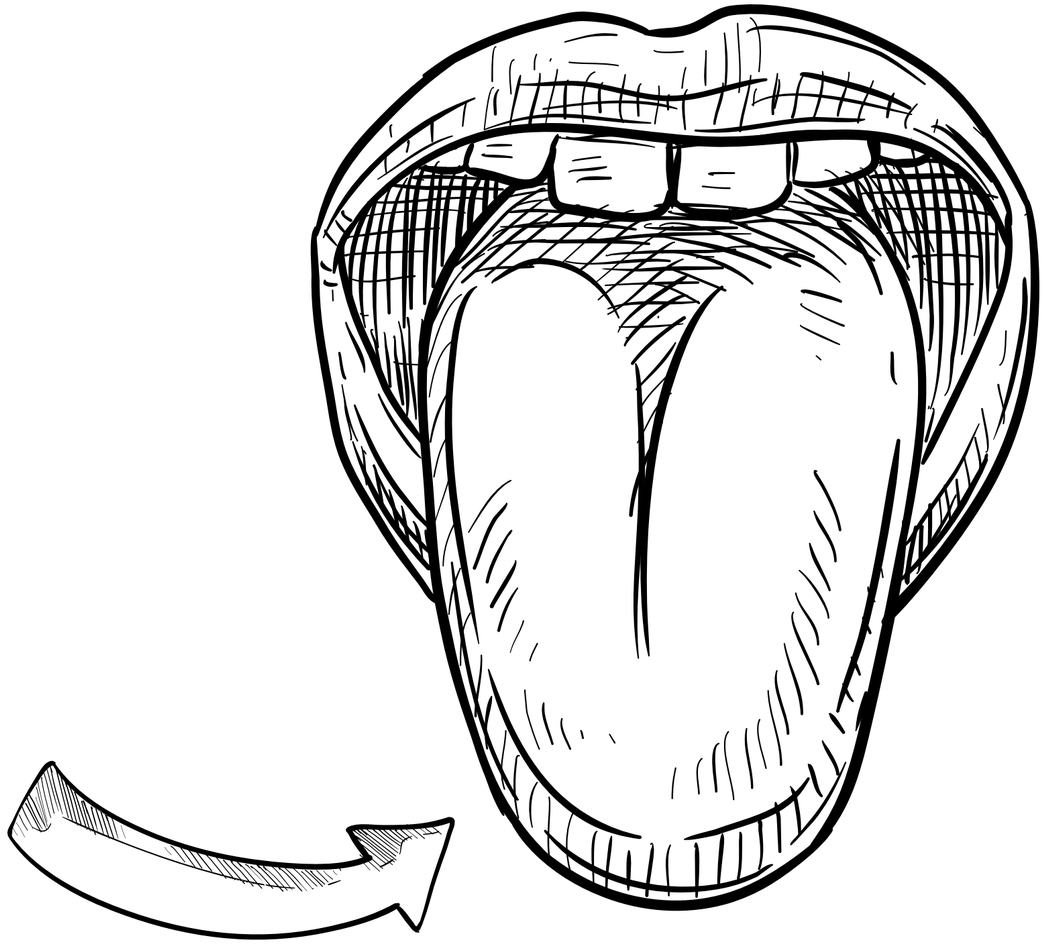
Carbohydrases are enzymes which break down carbohydrates into simple sugars.

Carbohydrates provide us with energy.

Starch is a form of carbohydrate. The enzyme amylase breaks starch down into glucose.

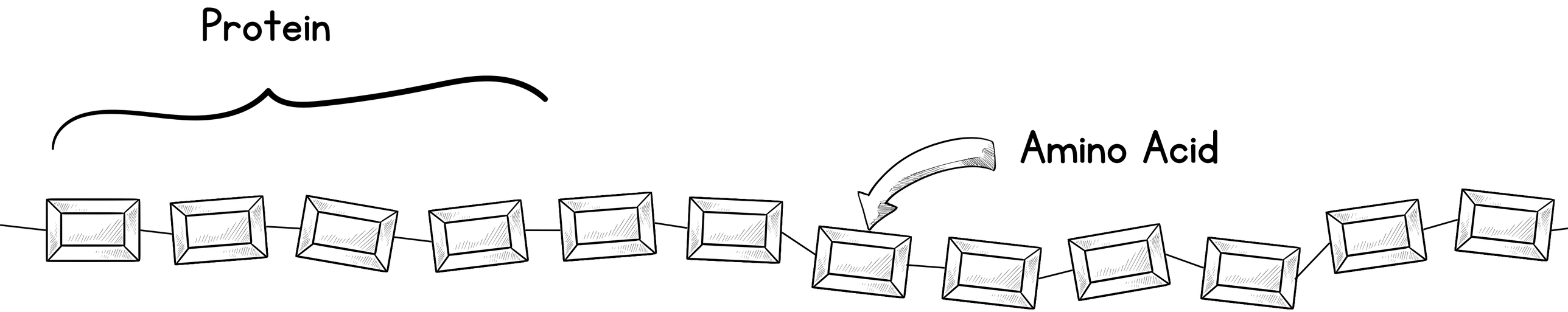
Carbohydrase Example

Salivary amylase is produced in our salivary glands. It breaks down starch into maltose, which is a sugar.



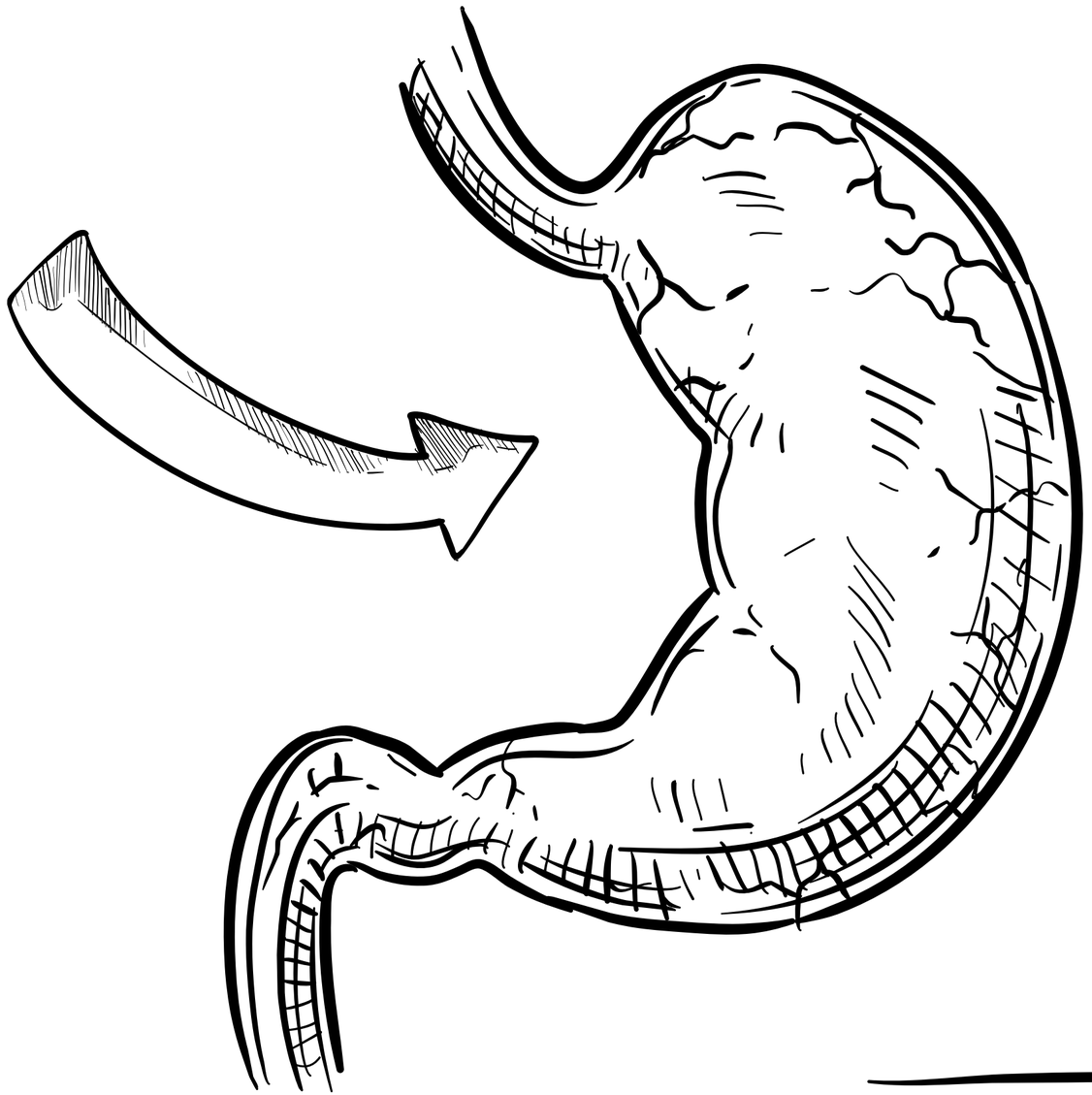
Proteases

Proteases are enzymes which break down proteins into amino acids.



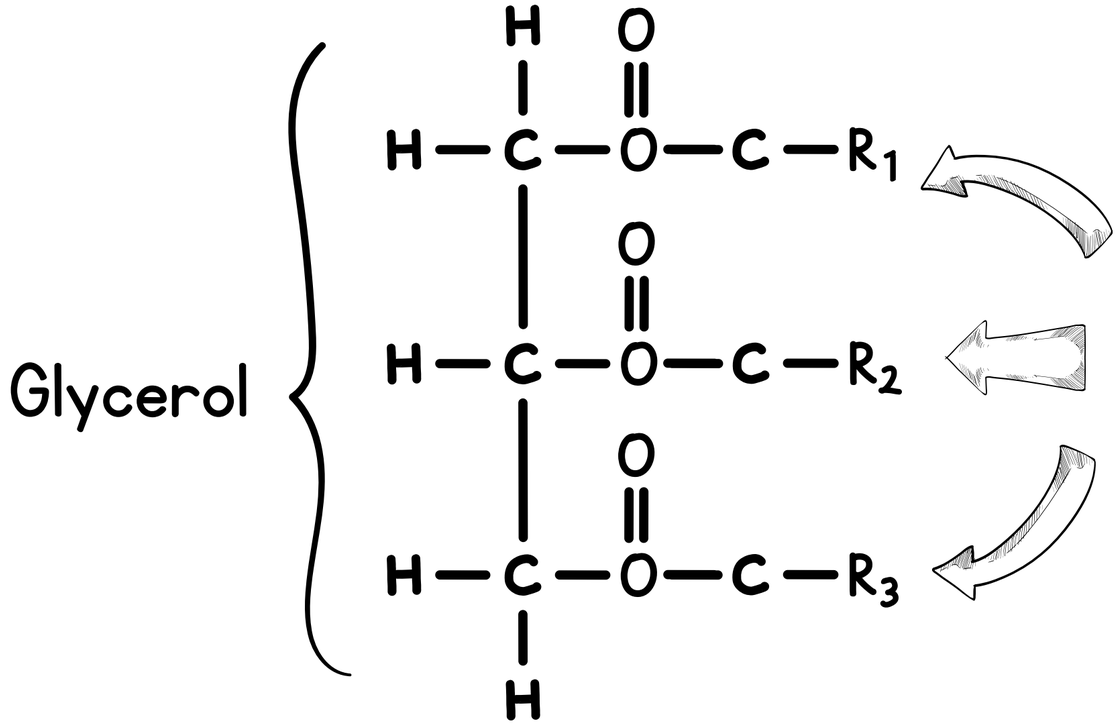
Protease Example

The protease enzyme pepsin is produced in the gastric glands in the stomach. Pepsin starts the process of breaking down proteins into amino acids. Other protease enzymes then complete this process.



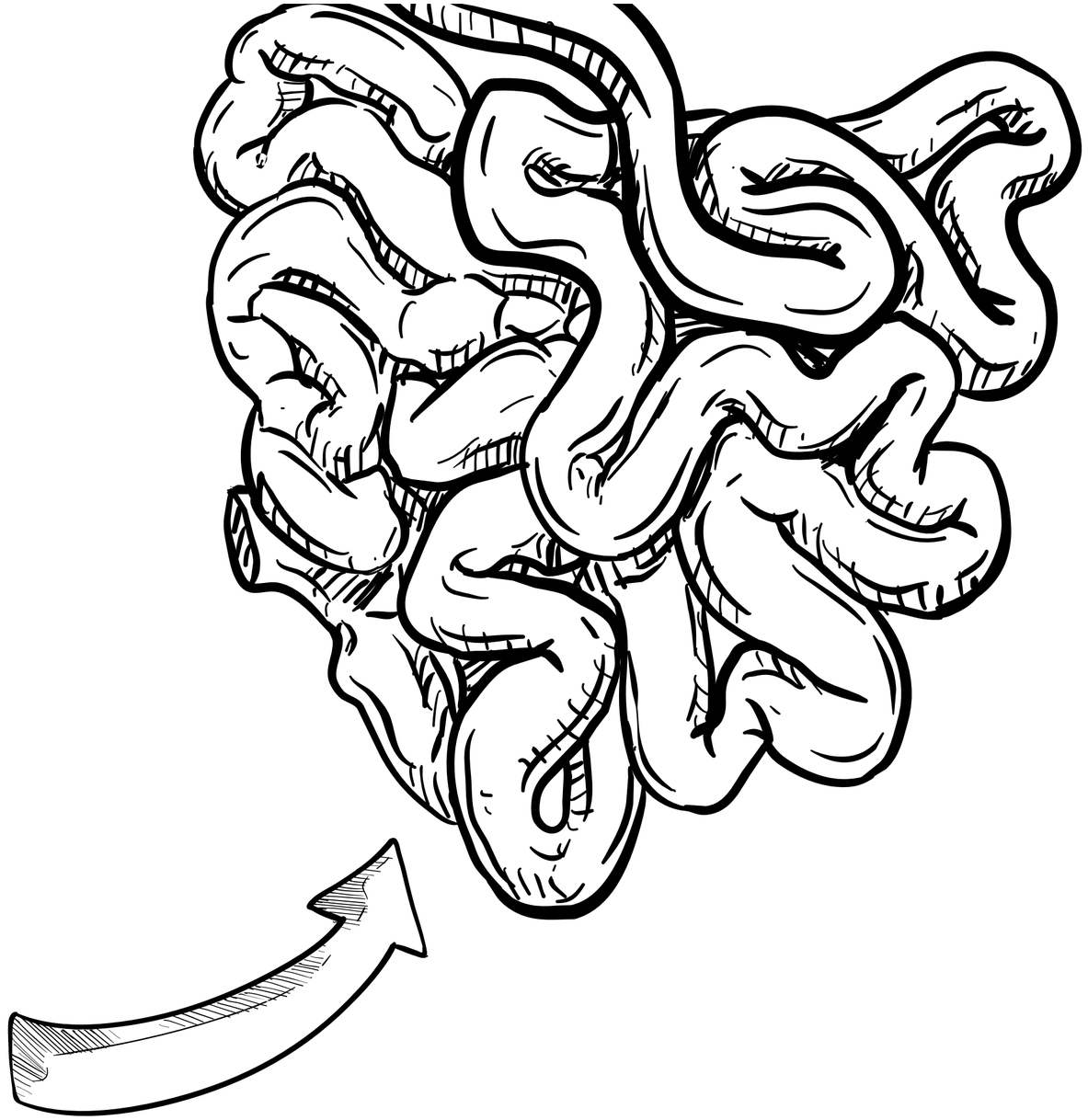
Lipases

Lipases are enzymes which break down lipids into fatty acids and glycerol.



Lipase Example

Lipase enzymes are produced in the pancreas. They work in the small intestine (duodenum) to turn lipids into fatty acids and glycerol.



Digestive Enzymes